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SCIENCE AND PROGRESS.

THE INGENIOUS PUZZLE OF THE HEART AND ARROW.

Information Regarding the Speed of Ocean Steamers—A Famous Patent Declared Invalid—Flowing Gas Wells in the Town of Fort Scott, Kan.
 The town of Fort Scott, Kan., appears to be in the enjoyment of special blessings, natural and artificial. The government sugar works are located there, and during the late sorghum crop harvest 16,500 pounds of mercantile sugar was daily manufactured, and the success of the sorghum sugar industry established.



One of the natural resources of the town are the gas wells, about which The Kansas Tribune relates the following particulars: "There are now some twelve wells, from which uncounted millions of cubic feet are daily flowing. At night they glow like gigantic torches, with flames twenty feet or more in height, which illuminate the surrounding country. Pipes have been laid through the town, supplying light and fuel to everybody at a cost of almost nothing. Various manufacturing industries are beginning to locate at Fort Scott, and others are coming in. The future prosperity of the place seems to be well settled."

Speed of Atlantic Steamers.

The returns, which have recently been issued by Nich. M. Bell, superintendent of foreign mails in the postoffice at Washington, give some information regarding the speed of Atlantic steamers. These give the time occupied in the conveying of mails during the twelve months from New York to London. The Cunard liner Umbria heads the list with an average time of 187.5 hours, while the Wisconsin, of the Gutin line, which stands at the foot, requires 238.1 hours to perform the same passage, being a difference of very nearly three days. Second on the list is the Umbria's sister ship, the Etruria, with 188 hours. Next comes the North German Lloyd steamer Trave, with an average of 193.3 hours, and the Anchor liner City of Rome, with 203.4 hours; while the Alaska, of the Gutin line, and the Aller, of the North German Lloyd, complete very closely for the fifth place with times of 205.3 and 205.7 respectively. Then we have a considerable number of North German liners with approximately equal times, the average of which is very nearly the time taken by the Cunard liner Aurania. Then follows the Servia, of the Cunard line, with 211.2 hours, and then the White Star liners put in an appearance—the Britannic, with the time of 219.8 hours; the Germanic, 228 hours; the Adriatic, 230 hours; the Republic, 235 hours; and the Celtic, 236 hours. The best of the Hamburg American line takes 240.7 hours, while almost at the bottom stand the Inman liners, the quickest of which, the City of Chicago, takes 241.6 hours; and the slowest, the City of Chester, requires 256.8 hours.

Fat as a Food.

The late Professor Hughes Bennett is quoted as saying that the great cause of the prevalence of pulmonary phthisis was the scarcity of good butter and the abundance of pastry cooks. A writer in Medical Reporter affirms that the butter supply has always been inadequate. He says: "The wise folks calling themselves reformers, who a few years ago went about lecturing upon the injurious nature of fat as a food, did a great deal of harm in exciting a prejudice against fat lard, bacon, pickled pork, and other forms of wholesome fats."

The Barbed Wire Patent Invalid.

This famous patent has at last been declared invalid in circuit court proceedings. The rights were founded on the Glidden patent, dated Nov. 24, 1874. Hitherto it has met with no legal reverses, though numerous attempts have been made to overturn it. The latest decision, rendered by Judge Shiras, in Iowa, declares it void for want of novelty.

A New Petroleum Spring.

At Balakhyn, near Baku, Russia, a new petroleum spring, which rose 150 yards, flooded the country, impregnating everything. Nobody ventures to light a fire for fear the town will go off like fireworks.

An Ingenious Puzzle.

The cut here given shows a single perforated piece of wood having the form of a conventional heart, and in the perforation is inserted an arrow, also formed of a single piece of wood, the barb and head being much larger than the perforation in which the shank of the arrow is received. The heart is made of one kind of wood and the arrow of another. The question is, How did the arrow get into the heart?



A NOVEL PUZZLE.

Scientific American, in which the illustration originally appeared, explains the apparent impossibility. The heart is of black wood and the arrow is of a single piece of wood, the barb and head being much larger than the perforation in which the shank of the arrow is received. The heart is made of one kind of wood and the arrow of another. The question is, How did the arrow get into the heart?

ALL AROUND THE HOUSE.

Elegant Designs in Table Cloths—A Home Made Screen—Recipes and Hints.

A very quaint and pretty idea in a center for a table cloth is a basket work of cream white, pick edged ribbon, caught at each crossing with a fine thread. The field is made of cream white satin. The border is of the basket plaited ribbon, each crossing fastened by a tiny silken ball. The perpendicular bands of ribbon extend below the cross bands, and are turned in points and finished by larger balls.

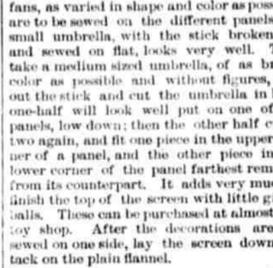
Elegant cloths are made of fine linen bordered with cut work or drawn work. Some of the drawn borders are marvels of fine needle work. They are filled in with various fancy stitches and lace patterns, and have fine point lace braid wrought into them in variety of the cloth, and are knotted and braided in various intricate fashions.

Cut work, says Decorator and Furnisher, which describes the above, is quite easy to do. It is made in button hole stitch over a stamped pattern, the spaces between being cut away. Sometimes these spaces are filled in with lace stitches; others are lined with bright silk or with ribbons. Borders of the cut out work are used on plain cloths.

Folding Screens.

A folding screen is now an almost necessary article of furniture, and few things are more useful. As handson, three fold screens are expensive, many ladies manufacture their own by first having a plain frame made by a carpenter. The frames can be of individual taste; four feet is a good height, and about sixteen or eighteen inches wide for each panel. The frame may be mounted on tiny brass casters, if liked.

The cover for the screen depends, of course, on one's own fancy. A pretty cover is dark brown Canton flannel on one side and a deep shade of red on the other. By laying the frame down on the floor or on a large table it is easy to tack on one side. Then, if the cover is not embroidered and you wish to decorate it, it is best to do so before putting on the other side. For instance you tack on the red Canton flannel, and by using brass headed tacks you can finish the edges very prettily. If plain tacks are used, it is best to finish the edges with a narrow gimp, or with black braid, herring bone stitching with gold silk; this makes a particularly pretty finish. Now for the decorations. A few Japanese fans, as varied in shape and color as possible, are to be sewed on the different panels. A small umbrella, with the stick broken out and sewed on flat, looks very well. Then take a medium sized umbrella, of as bright color as possible and without figures, take out the stick and cut the umbrella in half; one-half will look well put on one of the panels, low down; then the other half cut in two again, and fit one piece in the upper corner of a panel, and the other piece in the lower corner of the panel farthest removed from its counterpart. It adds very much to finish the top of the screen with little gilded balls. These can be purchased at almost any toy shop. After the decorations are all sewed on one side, lay the screen down and tack on the plain flannel.



A THREE PANELED SCREEN.

These screens are invaluable in a room where one is accustomed to lying down, for shielding one and preventing draughts. They may, of course, be made up of handsome material, with elaborate painted or embroidered decorations; but even a simple covering of light cretonne is pretty, and one has little idea, unless accustomed to use a folding screen, how very convenient they are.

Appetizing Dishes for Breakfast.

Two nice breakfast dishes, says one skilled in home cooking, are Graham gems and scalloped potatoes.
 For the first ingredients are one pint each of Graham flour and white flour, two teaspoonfuls of baking powder, one teaspoonful of salt and enough rich milk to make rather stiff batter. If there is cream in the milk the gems will be tender. Drop into hot gem pans and bake twenty minutes. Often make them with buttermilk and soda with good results.
 Scalloped Potatoes—Into a well buttered pan (often use sausage frying, which adds a good flavor, instead of butter) place a layer of cold cooked potatoes sliced thin, salt and pepper them, add another layer and cover with milk or cream. Bake until well browned. We like them very much. Cold mashed potatoes are nice baked in the same way.

Good Layer Cake.

To four eggs beaten very light add one cup of granulated sugar and beat well, then add four tablespoonfuls of sweet milk, one cup and a half of sifted flour containing two teaspoonfuls of baking powder and one tablespoonful of melted butter. Filling may be made as follows: Grate two sour apples and the rind of two small lemons; add the lemon juice to the apple, with a cupful of sugar and an egg. Beat a few minutes, put over the fire and let it come to a boil. If too thin, add a little corn starch. Let the filling cool before spreading on the cake.

Potatoes Served the Second Time.

A good way to warm over cold boiled potatoes is to first chop them—not too fine—heat some butter in a frying pan and put the potatoes in. Just a few minutes before taking them from the fire stir in some well beaten eggs. Serve hot.
 Sweet potatoes left from dinner make an acceptable relish for supper if cut in slices about a quarter of an inch thick and heated in slightly salted cream.

Wooden Ware for the Kitchen.

Long spoons and wooden paddles, made from white, hard wood, are most convenient for stirring and beating.
 Boards of various sizes should be kept in convenient places, one for bread, one for meat, another for cutting, and two or three smaller ones on which to stand pots and kettles.

When the Flue Catches on Fire.

If a chimney or flue catch on fire, close all windows and doors first, then hang a blanket in front of the grate to exclude all air. Water poured down the chimney spoils the carpets. Course salt thrown down the flue is much better.

Keep the Carpet Bright.

Carpets may be greatly brightened by first sweeping thoroughly and then going over them with a clean cloth and clear salt water. Use a cupful of coarse salt to a large basin of water.

PHYSIOLOGY AND HYGIENE.

The Nervousness of Women—First Symptoms of Infectious Diseases.

An eminent German hygienist has declared that the nervousness of women is generally owing to two defects—anaemia, caused by the silly notion that a hearty appetite is un-feminine, and fresh air starvation, accompanied by a lack of exercise. To their fondness for fresh air, their open windows at night, and their constant exercise, he attributes the greater beauty of the English women. "The beauty of the German women," he says, "lies in their face, with its changing and amiable expression. The beauty of the English lies in the whole body and in their health. German women," he adds, "are martyrs to an unnatural state of civilization, and if they would only imitate the English, hysteria would diminish in frequency."

Care of the Hair.

To promote the growth of the hair and check its falling out, sage tea is not only a time honored remedy, but an excellent one. Where it fails, it is usually from want of perseverance in its use. Ammonia and borax are commonly recommended nowadays for cleansing the scalp. Ammonia is a good stimulant, and a little of it may be used in the water for washing the head; but too much will make the hair dry and brittle, injure its color and inflame the scalp. The action of borax is more mild, but it, too, should be sparingly used. Neither should the hair be washed any oftener than is absolutely necessary for purposes of cleanliness. Frequent washing removes the natural oil from the hair, rendering it harsh, brittle, and increasing the tendency to split. Yolk of egg beaten in a little water is a good cleanser for the scalp. After washing the hair rinse it clean, then wipe as dry as possible with towels, and dry it by the fire. Never attempt to comb or brush it while still damp; wait till it has dried perfectly. Neither go out of doors or to bed with damp hair if you do not wish to take cold.

How Infectious Disease Begins.

Measles begin as a cold, with running at the eyes and nose, and the rash is in dark red spots, first seen on the face and forehead. Scarlet fever commences with a sore throat, and the rash appears as a general redness of the skin and shows itself about the neck and chest. Diphtheria begins with marked weakness, and the inflammation in the back part of the mouth soon has a peculiar smell, of putrid meat. Youth's Companion, which enumerates the above symptoms, advises that in no case should either of these diseases be trusted to home treatment. While the physician looks after the cure of the patient, the friends should actively co-operate in preventing the spread of the disease, not only in the whole matter of disinfection, but in completely isolating the child until the possibility of communicating the infection is over.

Bed Slippers.

No person should run about sleeping rooms into halls from bed in bare feet. Air currents are constantly in motion near the floor, and circulation is more easily retarded in feet and legs than near the heart. For one who is liable to be called up frequently, as in case of illness, it is therefore a good plan to have a warm pair of slippers always close to the bed, that may be slipped on quickly before one's feet touch the floor; made loose enough to be kicked off when climbing into bed again.

Remedy for Wakefulness.

Rise early, exercise freely in the open air, and do not sleep in the day time. Eat light suppers, and retire at a regular hour. Sponge the body with tepid water, and rub briskly with a coarse towel. Winter night clothes should be made of flannel, sufficiently long to cover the feet and prevent contact with cold sheets. Do not give a child paregoric or soothing syrups for sleeplessness or fretfulness.

Laugh and Enjoy Good Digestion.

"Laughter," says Hufeland, "is one of the greatest aids to digestion. Endeavor to have cheerful, merry companions at your meals. What nourishment one receives amid mirth and jollity will certainly produce good and light blood."

SOCIAL ETIQUETTE.

The Much Disputed Question of Chaperons for American Girls.

A girl's mother is her natural chaperon, and should be always with her on her entrance into society, says Mrs. Sherwood. But there are many American girls who have no "start in life," no introduction, and no surrounding; yet such a girl may marry and become the wife of a senator or a president, when the questions of etiquette and precedence will occupy much of her attention. Shall such a young girl refuse the attentions of a young man because no chaperon is forthcoming? It is an embarrassing question. We can truly say that while a young girl has the protecting influence of work in our brave young world, "A thousand liveried angels lackey her."

If she is a young school mistress, artist or musician, shop girl or dressmaker, if she respects herself, all the world will respect her. She is self concentrated, a loner of life. It is a noble, a beautiful trait of our American life, the respect paid to women. We have nothing to say to such a girl if she is motherless and friendless but to advise her to choose some young girl friend, that both may go together when they seek a mutual outing.

But if a girl enters the world of fashion she must accept its laws and limitations. They are inexorable, and she must accept them if she would succeed. American women generally possess a strong sense of propriety. They have a truly healthy love for virtue, an abiding suspicion of wrong, as American men have a natural love of law and order and a propensity to obey the law. Let us hope that it is the natural outcome of a young republic and owing to the exceptionally respectful and chivalrous nature of American men, that an American woman is safe anywhere. Bret Harte and all the playwrights have treated us to the spectacle of the sight of one young school mistress who charmed a whole colony of wild miners into submission and clean linen.

Children's Etiquette.

In the best social circles children are no longer trained to the use of sir and madam, or ma'am toward parents and relatives. "Yes, mamma," and "No, papa," "No, aunt," "Yes, uncle," and the like, replace what was once the only respectful formula. Indeed, one authority affirms that "sir" should be by everybody used sparingly and toward superiors only, and that "ma'am" is a word to be entirely discarded. It is, however, customary, if the questioner is an older person, to respond, "No, sir," "No, ma'am," and the like, if an equal in age or position, simply "No" and "Yes."

Afternoon Tea.

It is not necessary to write either an acceptance or regret to an invitation to an afternoon tea. You must either go to the tea or send your card at the hour designated. Gray is every shade is considered in Paris just now the most stylish of accessories.

SCRIBNER'S MAGAZINE

Prospectus for 1888—Beautiful Christmas Number.

Among the important articles to appear during the year 1888 are the following—Send for prospectus;

ROBERT LOUIS STEVENSON will contribute regularly to each number during the year. He will write of many topics, old and new, and in a familiar and personal way, which will form new bonds of friendship between the author and his thousands of readers. In his first paper entitled "A Chapter on Dreams," appearing in the January number, he relates incidentally, in connection with the general subject, some interesting facts concerning the origin of the now famous story, "Strange Case of Dr. Jekyll and Mr. Hyde."

RAILWAY ACCIDENTS, by W.S. CHAPLAIN, will be the first of an especially important and interesting series of papers on railways, their administrations and construction, including great engineering feats, famous tunnels and passages, and, indeed, those branches of the subject which in this day engage the attention of the whole country. The illustrations which will accompany this series will be very elaborate, original, and beautiful. The authors and the titles of the future articles will be announced later.

DR. D. A. SARENT'S papers on Physical Proportions and Physical Training will be continued by several of increasing interest, with as rich and unique illustration as those which have already appeared.

ILLUSTRATED ARTICLES of special interest will be those on the Campaign of Waterloo, by JOHN C. ROPES; on "The Man at Arms," by E. H. BLASHFIELD; two papers by EDWARD L. WILSON, illustrating results of recent Egyptian research; a further article by WILLIAM F. AP'TAORP, on a subject connected with his recent contribution on Wagner, and many other of equal interest. PROFESSOR SHALER'S articles on the Surface of the Earth will be continued and articles upon two of the most interesting groups of contemporary European writers will be accompanied by rich and novel portrait illustrations.

ELECTRICITY in its various applications as a motive power EXPLOSIVES, etc., will be the subjects of another group of illustrated articles of equal practical interest, by leading authorities upon three topics.

MENDELSSOHN'S LETTERS written to his friend, Moscheles, at a peculiarly interesting time of his career, will furnish the substance of several articles of great interest to musical readers, which will be illustrated with portraits and drawings from Mendelssohn's own hand.

THE FICTION will be strong, not only in the work of well-known writers, but in that of new authors, in securing whose co-operation the Magazine has been so fortunate during its first year of publication. A serial novel, entitled "First Harvests," by FREDERIC J. STIMSON, will be begun in the January number, and early in the year no. elites will be published by HENRY JAMES and H. C. BUNNER. The short stories are of noticeable strength and freshness.

ILLUSTRATIONS. The Magazine will show increased excellence in its illustrations. They will be more abundant and elaborate than ever. It is the intention of the publishers to represent the best work of the leading artists, and to promote and foster the most skillful methods of wood engraving.

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